FIG. 1

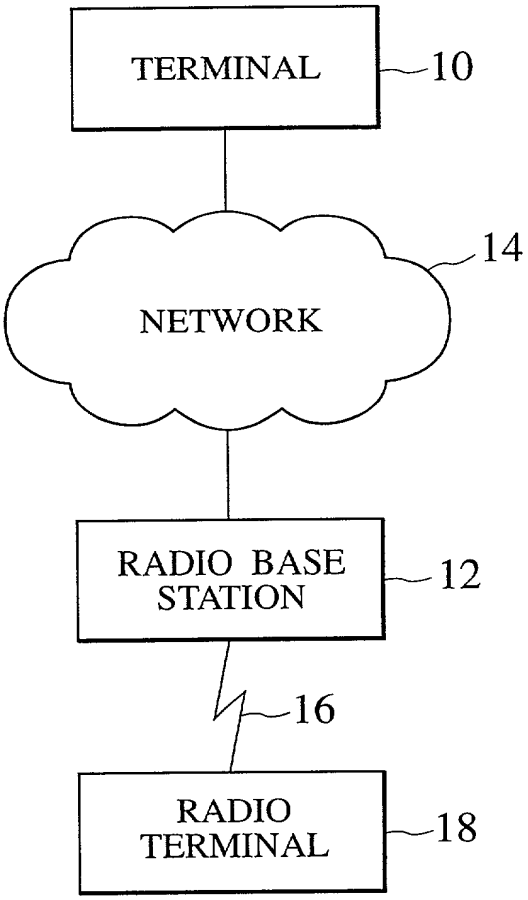

TERMINAL
10
NETWORK
14
RADIO BASE STATION
12
16
RADIO TERMINAL
18

FIG. 2

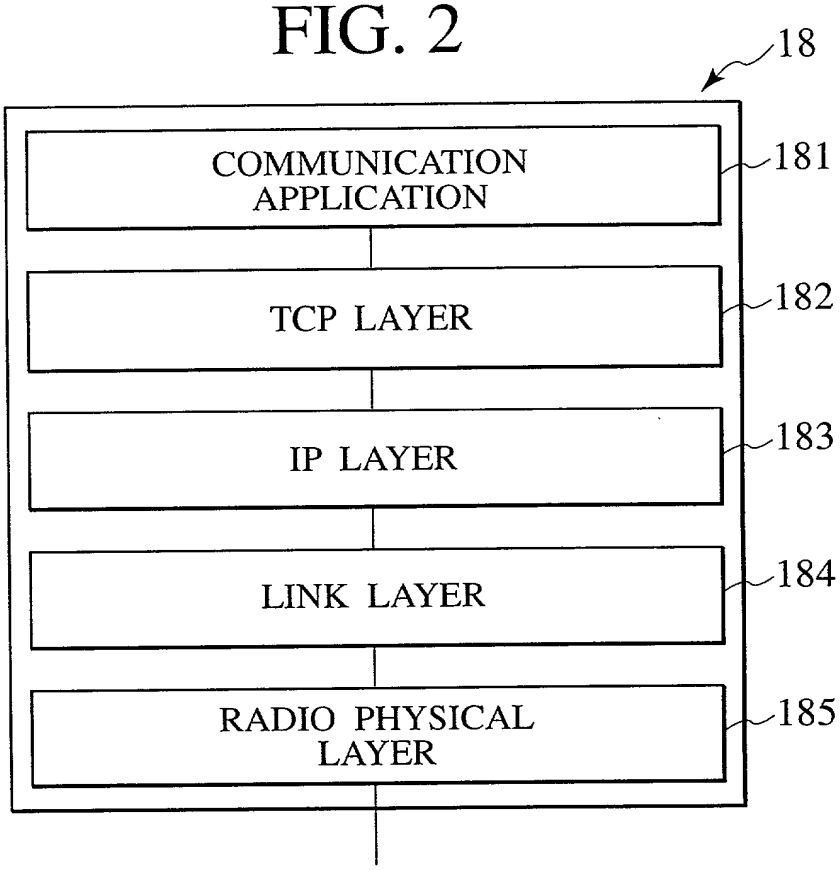

18
COMMUNICATION APPLICATION
181
TCP LAYER
182
IP LAYER
183
LINK LAYER
184
RADIO PHYSICAL LAYER
185

FIG. 3

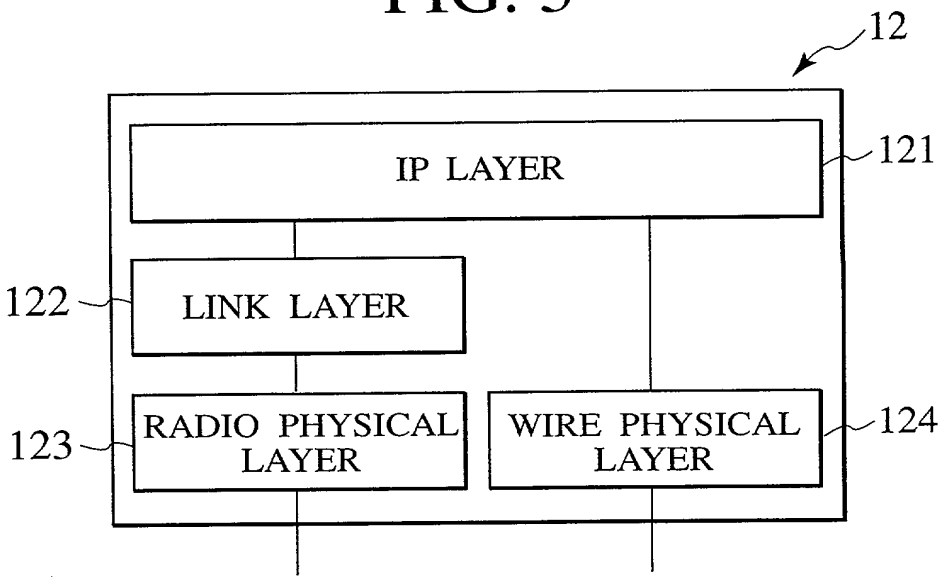

12
IP LAYER
121
122
LINK LAYER
123
RADIO PHYSICAL LAYER
WIRE PHYSICAL LAYER
124

FIG. 4

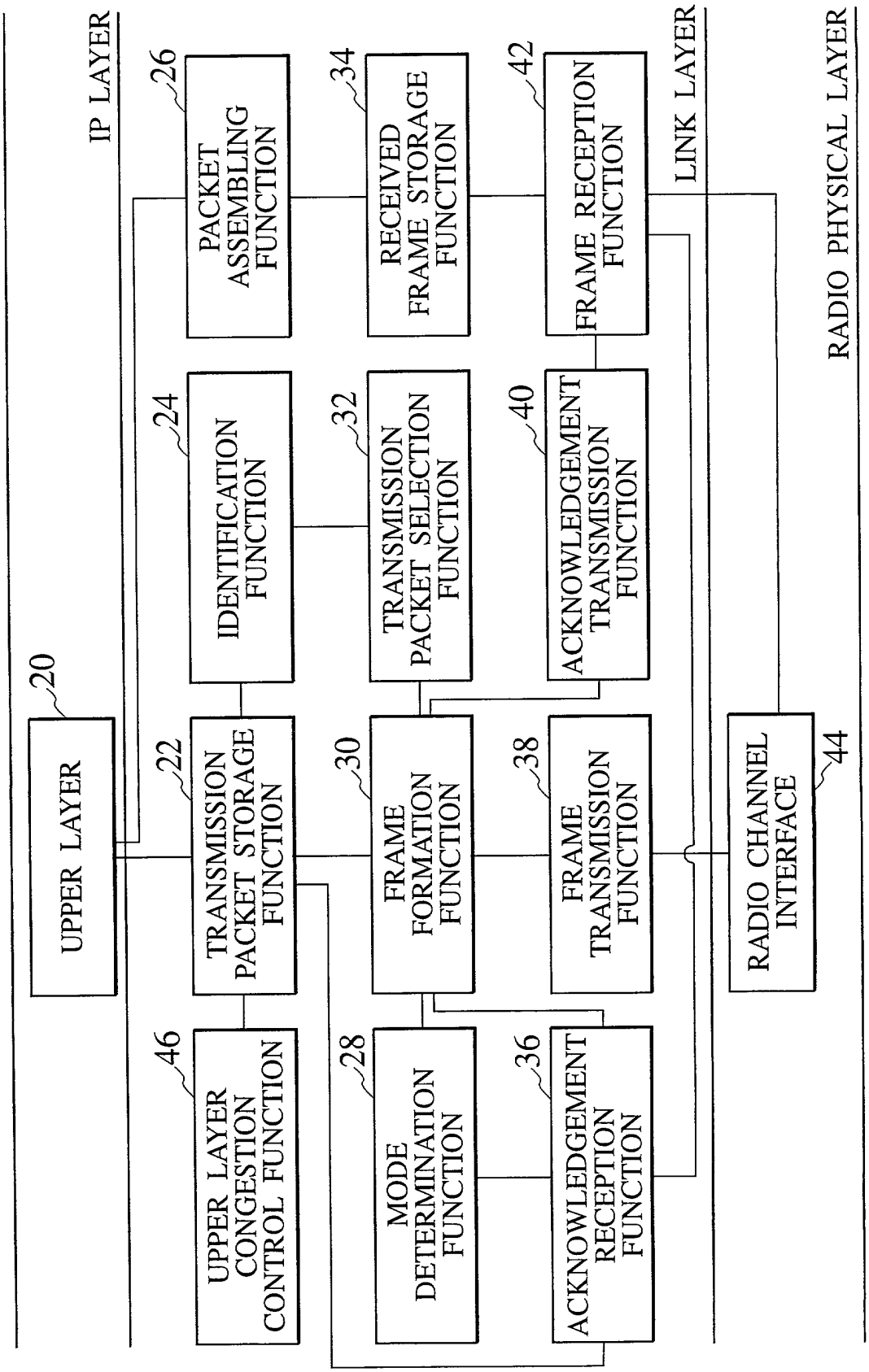

IP LAYER
LINK LAYER
RADIO PHYSICAL LAYER
UPPER LAYER
20
TRANSMISSION PACKET STORAGE FUNCTION
22
IDENTIFICATION FUNCTION
24
PACKET ASSEMBLING FUNCTION
26
UPPER LAYER CONGESTION CONTROL FUNCTION
46
MODE DETERMINATION FUNCTION
28
FRAME FORMATION FUNCTION
30
TRANSMISSION PACKET SELECTION FUNCTION
32
RECEIVED FRAME STORAGE FUNCTION
34
ACKNOWLEDGEMENT RECEPTION FUNCTION
36
FRAME TRANSMISSION FUNCTION
38
ACKNOWLEDGEMENT TRANSMISSION FUNCTION
40
FRAME RECEPTION FUNCTION
42
RADIO CHANNEL INTERFACE
44

FIG. 5

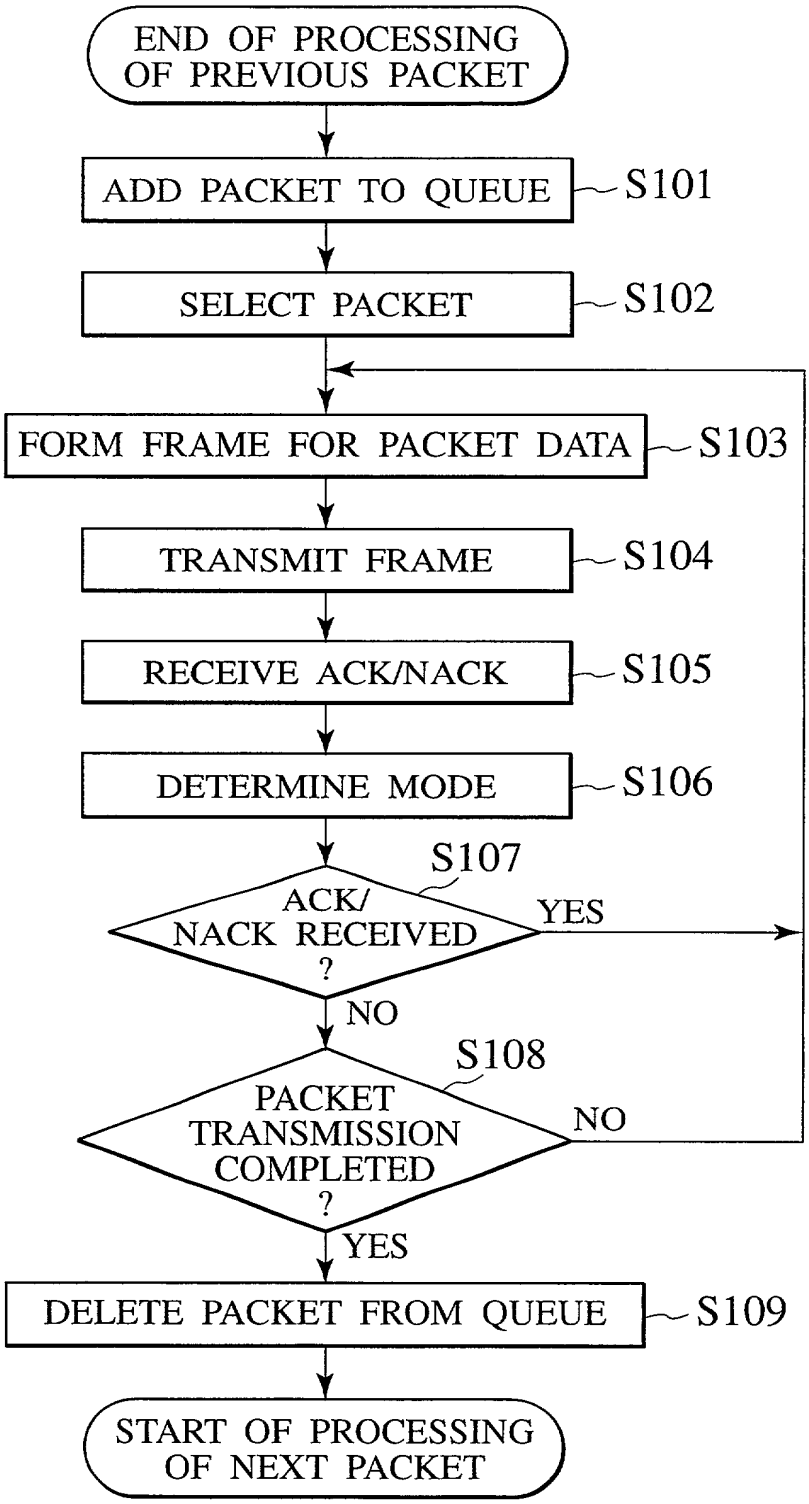
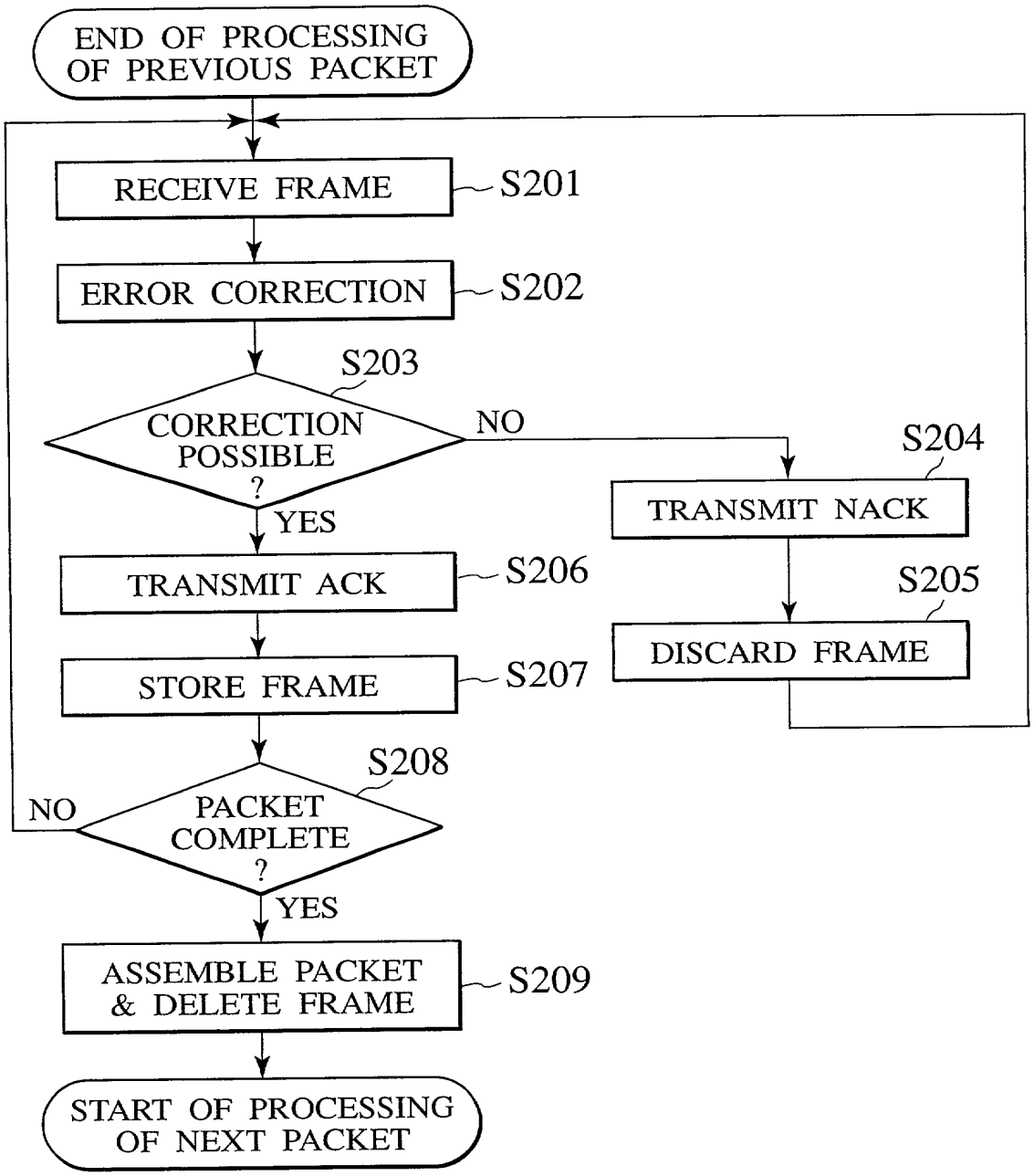
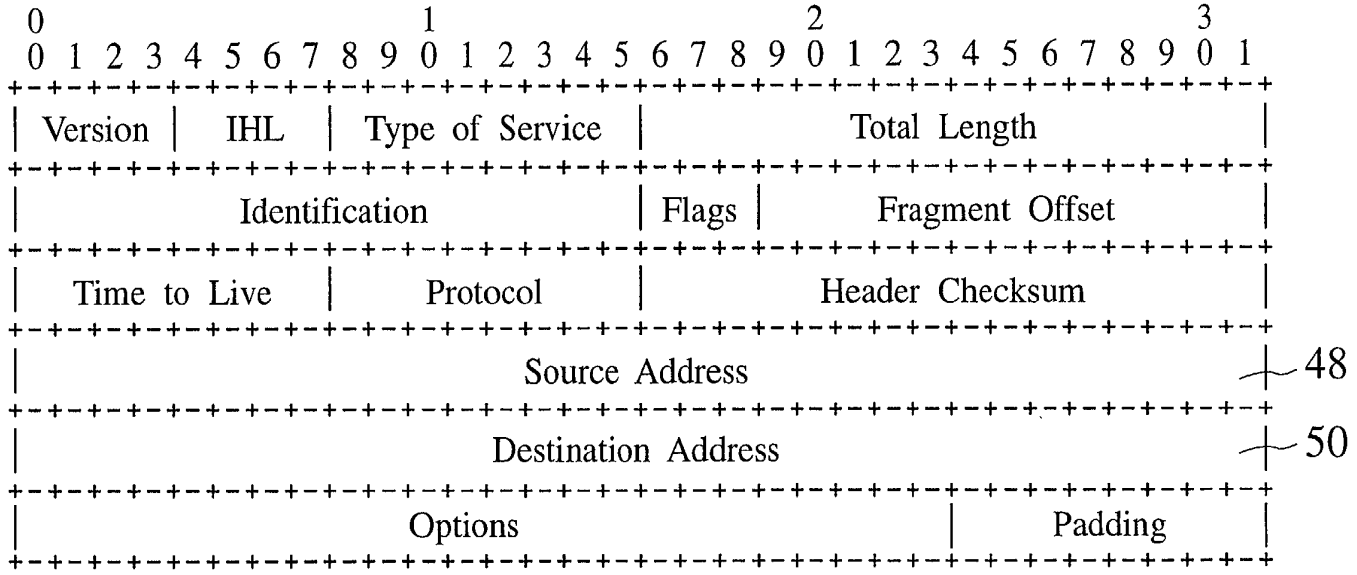

END OF PROCESSING OF PREVIOUS PACKET
ADD PACKET TO QUEUE
S101
SELECT PACKET
S102
FORM FRAME FOR PACKET DATA
S103
TRANSMIT FRAME
S104
RECEIVE ACK/NACK
S105
DETERMINE MODE
S106
S107
ACK/ NACK RECEIVED ?
YES
NO
S108
PACKET TRANSMISSION COMPLETED ?
NO
YES
DELETE PACKET FROM QUEUE
S109
START OF PROCESSING OF NEXT PACKET

FIG. 6


END OF PROCESSING OF PREVIOUS PACKET
RECEIVE FRAME
S201
ERROR CORRECTION
S202
S203
CORRECTION POSSIBLE ?
NO
S204
TRANSMIT NACK
YES
TRANSMIT ACK
S206
S205
DISCARD FRAME
STORE FRAME
S207
S208
NO
PACKET COMPLETE ?
YES
ASSEMBLE PACKET & DELETE FRAME
S209
START OF PROCESSING OF NEXT PACKET

PUBLISHED SEARCHED

FIG. 7



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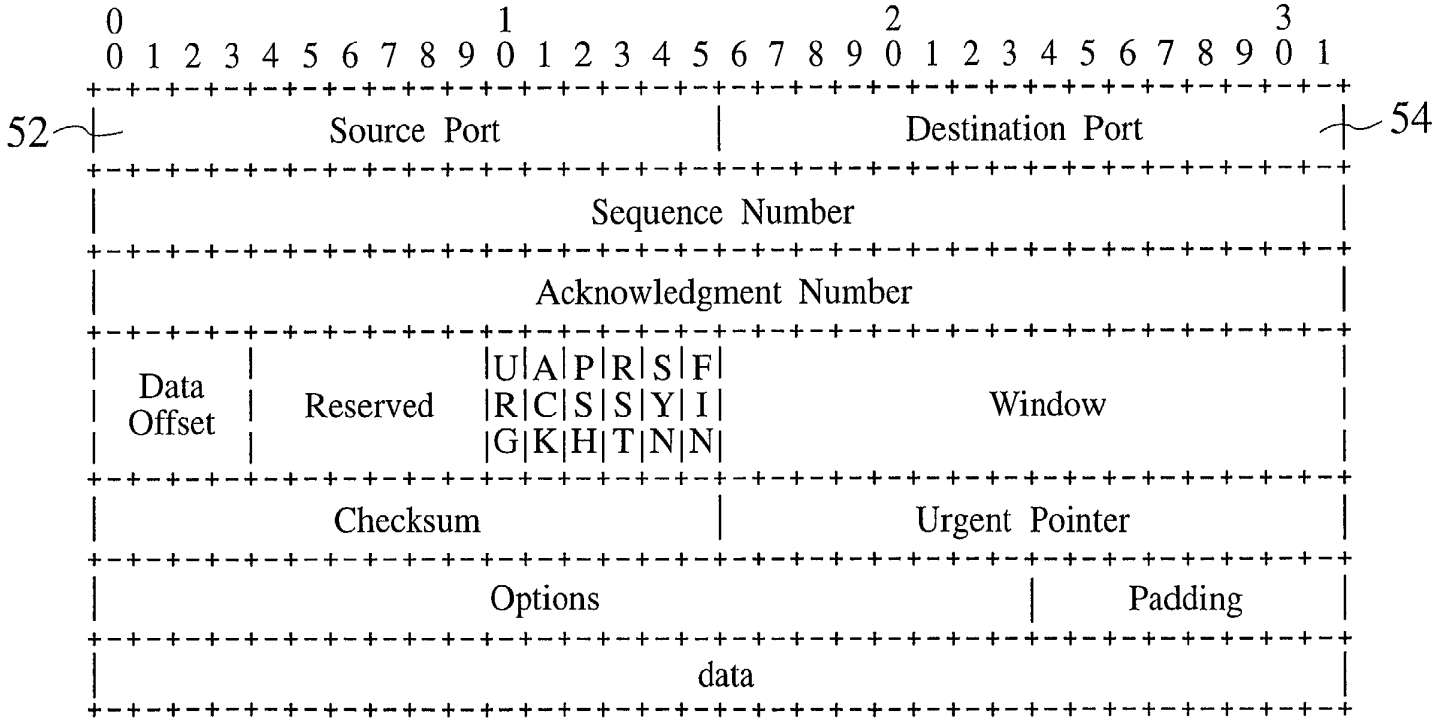
DOCKET #: 206399US2RD
INV: Masahiro TAKAGI
SHEET 6 OF 12

PCT/US98/23815

FIG. 8



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DOCKET #: 20639US2RD
INV: Masahiro TAKAGI
SHEET 7 OF 12

FIG. 9

TCP TRANSMISSION MANAGEMENT TABLE (1)

TCP CONNECTION	TRANSMITTED BEFORE
#1	YES
#2	NO
≈	≈
#X	NO

FIG. 10

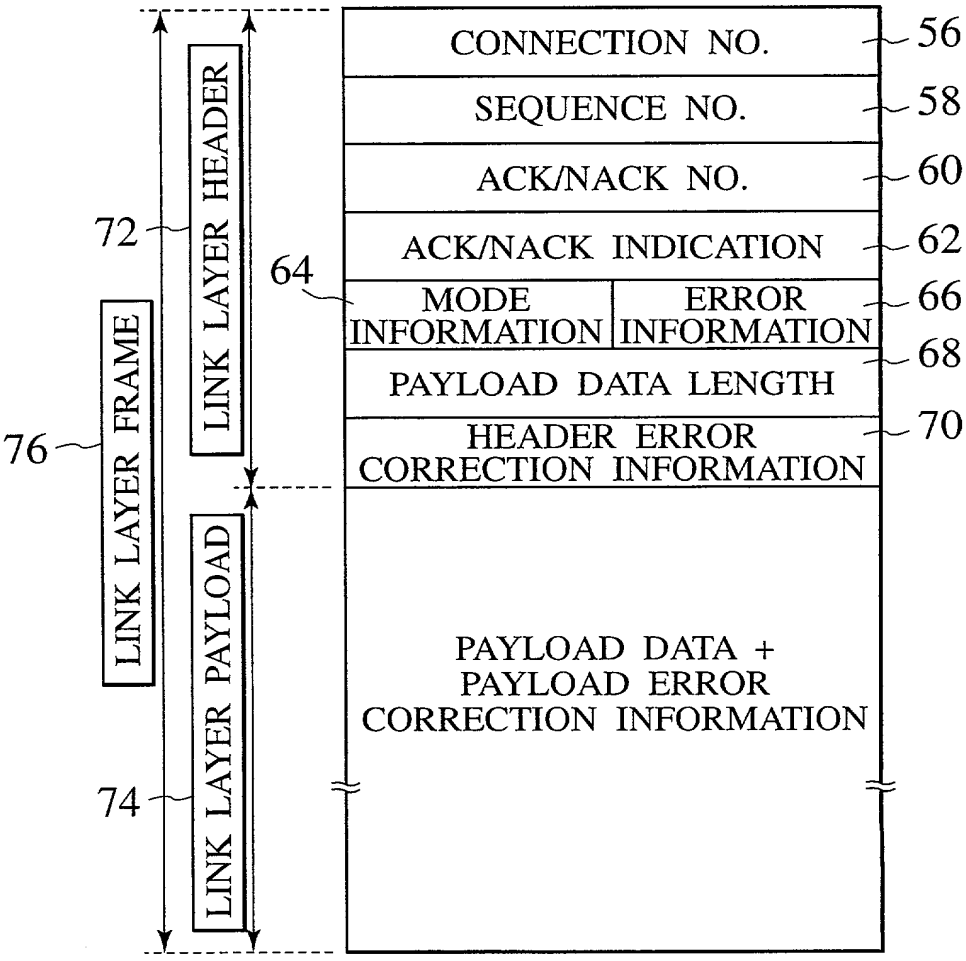


FIG. 11

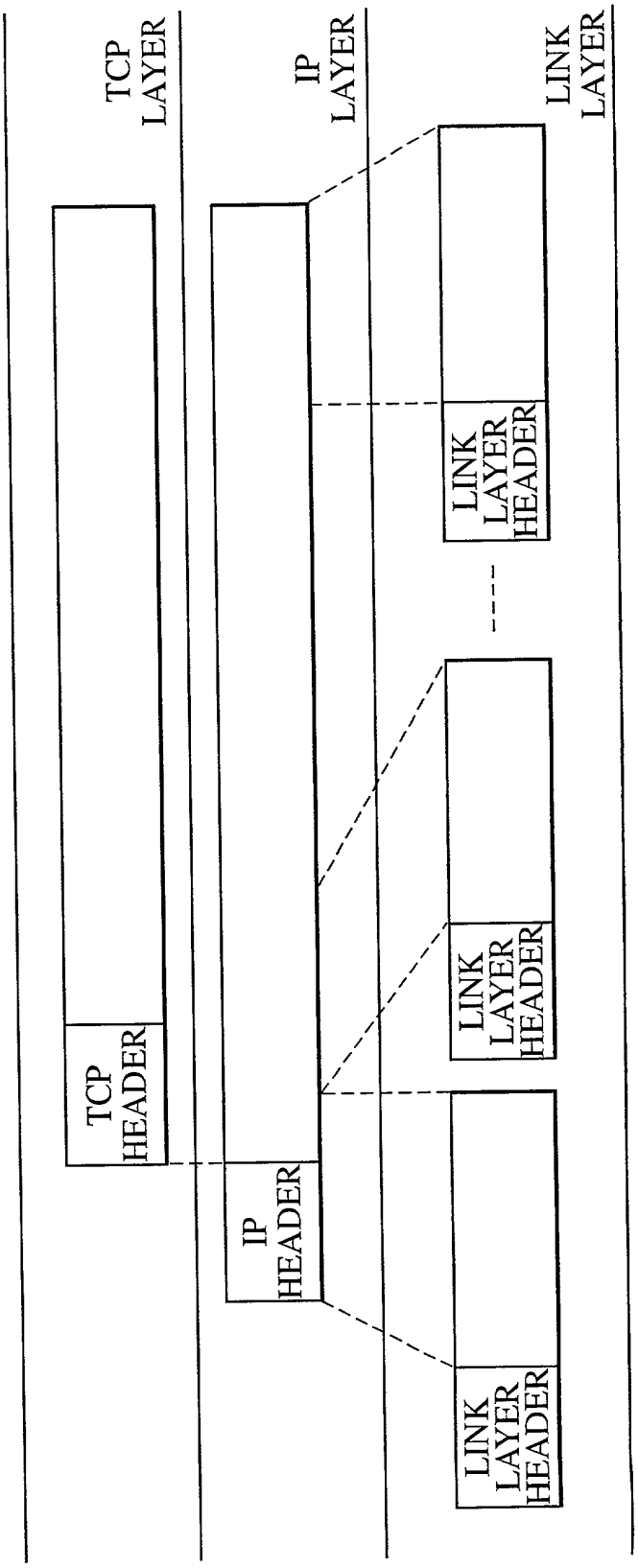

TCP LAYER
IP LAYER
LINK LAYER
TCP HEADER
IP HEADER
LINK LAYER HEADER
LINK LAYER HEADER
LINK LAYER HEADER

FIG. 12

TCP TRANSMISSION MANAGEMENT TABLE (2)

TCP CONNECTION	TRANSMITTED BEFORE
#1	YES
#2	YES
#X	NO

FIG. 13

TCP TRANSMISSION MANAGEMENT TABLE (3)

TCP CONNECTION	TRANSMITTED BEFORE
#1	NO
#2	NO
#X	NO

FIG. 14

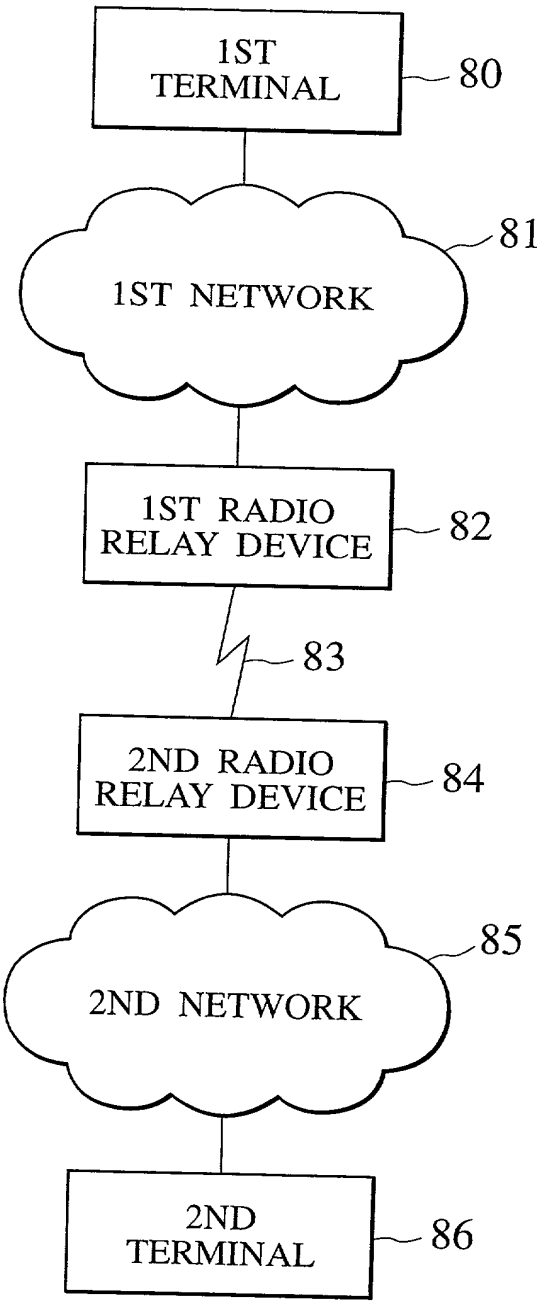

1ST TERMINAL
80
1ST NETWORK
81
1ST RADIO RELAY DEVICE
82
83
2ND RADIO RELAY DEVICE
84
2ND NETWORK
85
2ND TERMINAL
86

FIG. 15

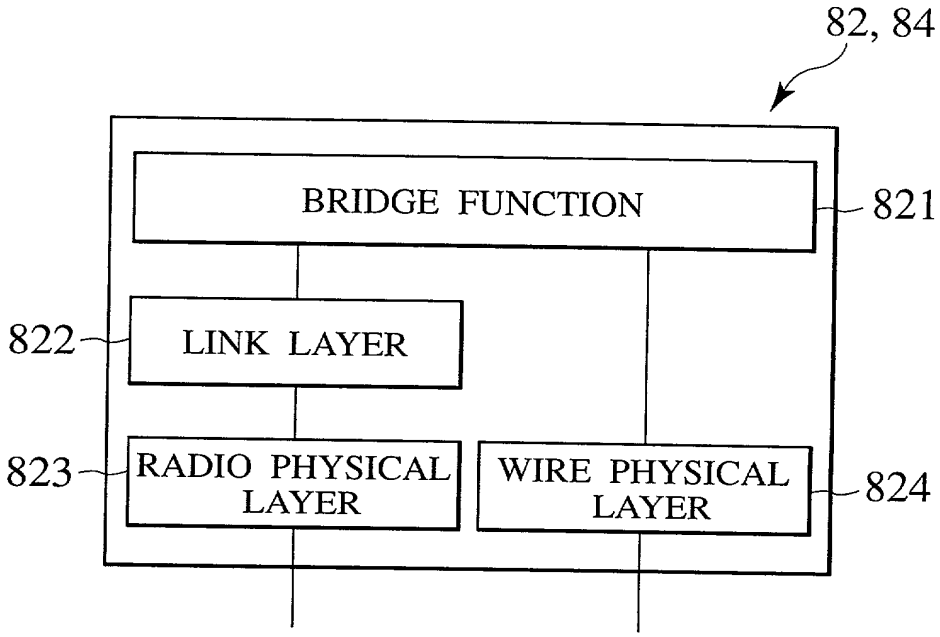
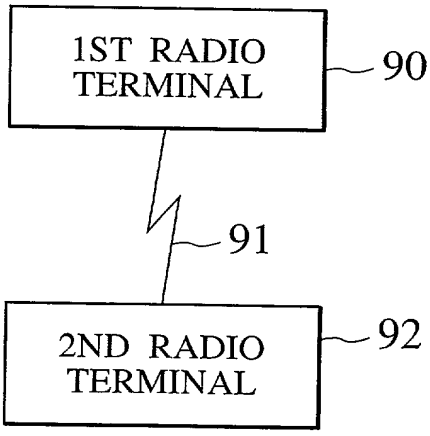

82, 84
BRIDGE FUNCTION
821
822
LINK LAYER
823
RADIO PHYSICAL LAYER
WIRE PHYSICAL LAYER
824

FIG. 16


1ST RADIO TERMINAL
90
91
2ND RADIO TERMINAL
92